A BATHING DEVICE FOR BILATERAL ABOVE-ELBOW AMPUTEES

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INTRODUCTION

Bilateral upper-extremity amputees have varying levels of self-care independence. Using prostheses, many bilateral below-elbow amputees are able to manage all dressing and toilet care functions. Bilateral above-elbow wearers can reach levels of near independence if expertly harnessed and well trained (1).

Bathing is a difficult task for bilateral above-elbow amputees since it must be done without benefit of the prostheses. To meet the problem, a device which simulates the function of the prostheses was designed and fabricated at Northwestern University Prosthetic Research Center (Fig. 1, 2, and 3).

FABRICATION

The unit consists of bilateral sockets with a simple elastic harness, polyester sockets, humeral sections, elbow mechanisms and forearms with sponges on the end (Fig. 4 and 5). The elbow mechanism permits flexion and extension, internal and external rotation, and pronation and supination of the forearm. Passive friction is used to position the sponges in all ranges. During installation, one humeral section is shortened to permit scrubbing about the head and shoulders. The other humeral section is sized to work best in the perineal area.

The materials selected are non-corrosive. The unit has been designed around standard hardware that would be available to any limb shop. Machining operations are confined to cutting, drilling and tapping.

PROCEDURE

Friction setting can be adjusted by the prosthetist or a family member. The amputee should be able to don the device himself. When bathing, a bar of soap is inserted in each sponge to provide continuous soaping action.

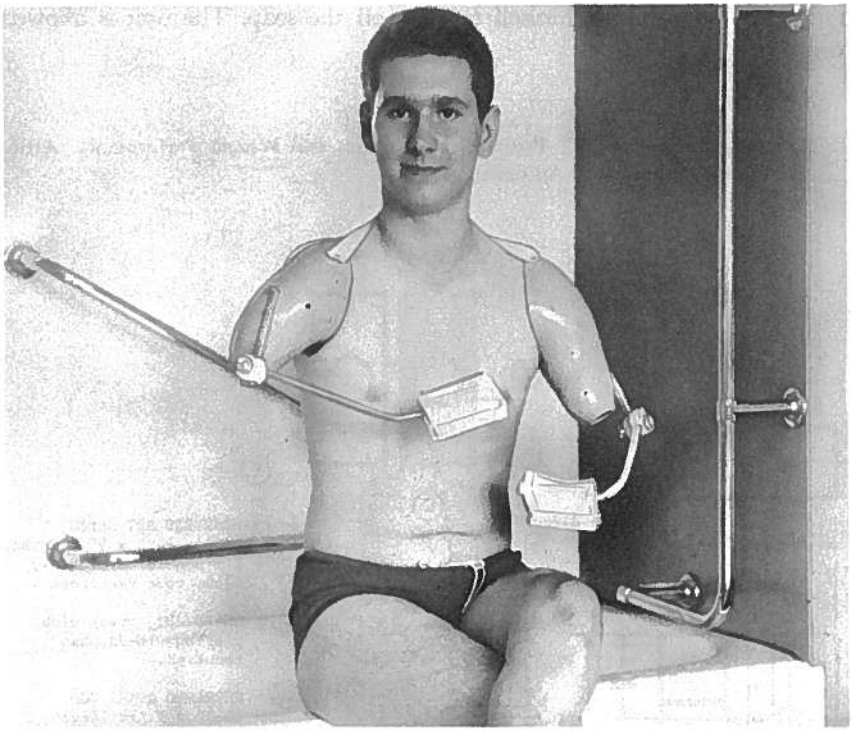


FIGURE 1

FIGURE 2

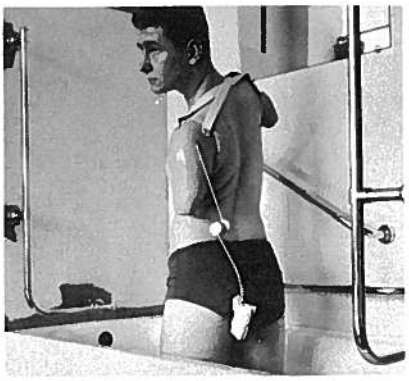


FIGURE 3

The amputee immerses himself to rinse off the soap. The unit is allowed to air-dry.

REFERENCE

1. Kay, H. W., Peizer, E.: Prosthetic Usefulness and Wearer Performance. Artificial Limbs, 5(2):63-67, Autumn, 1958.

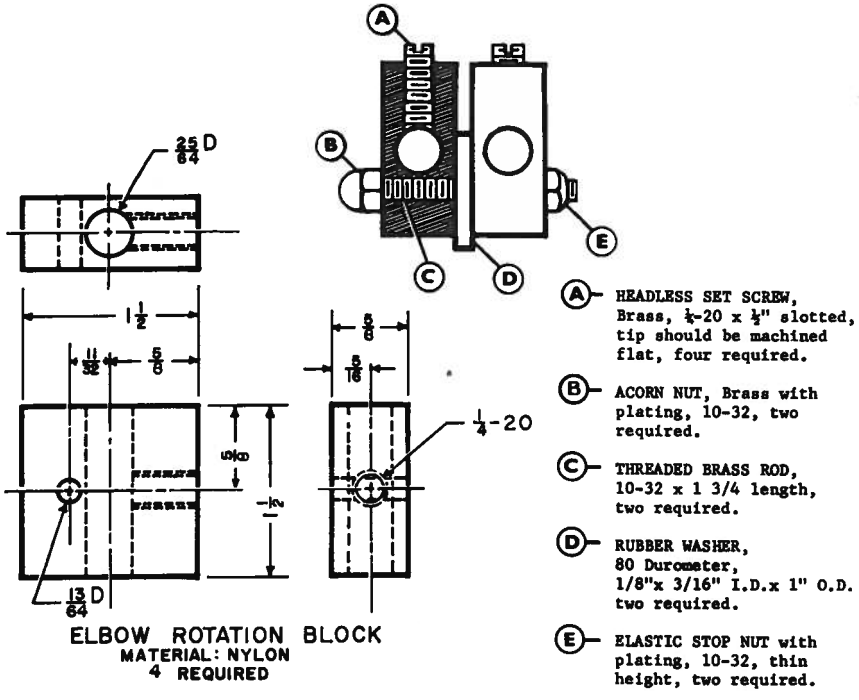
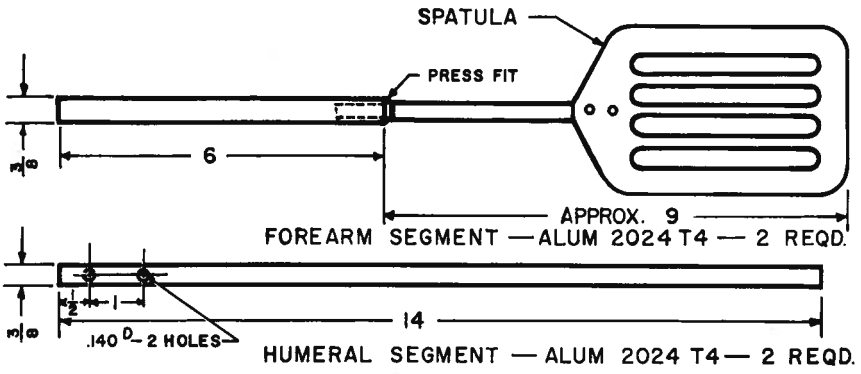
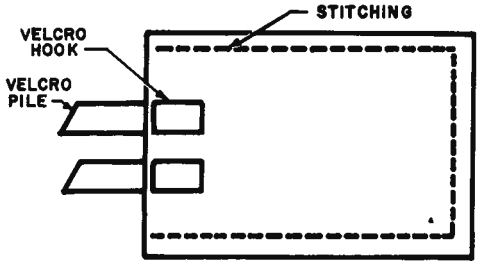


Figure 4





CELLULOSE SPONGE ENVELOPE
TO FIT SPATULA
2 REQD.

TO OBTAIN MAXIMUM FUNCTION:
—CONTOUR FOREARM SEGMENT
—SHORTEN HUMERAL SEGMENT

FIGURE 5